

Abstract

The present invention provides for an apparatus and method of use to control a downhole tool remotely based on the autocorrelation of command sequences. Repeating signals of *a priori* unknown or undefined shape can be correlated to themselves to reliably distinguish intentional changes from random fluctuations or other operations performed on the well. Using autocorrelation, any fluctuation of pressure of sufficient amplitude can be used to send commands by controlling the timing or the number of repetitions of the sequence.